



# भारत का राजपत्र

## The Gazette of India

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इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके  
Separate paging is given to this Part in order that it may be filed as a separate compilation

### नोटिस NOTICE

नीचे लिखे भारत के असाधारण राजपत्र 8 फरवरी 1968 तक प्रकाशित किये गये हैं :—

The undermentioned *Gazettes of India Extraordinary* were published up to the 8th February 1968 :—

अंक Issue No.	संख्या और तारीख No. and Date	द्वारा जारी किया गया Issued by	विषय Subjects
21.	सं. 3(5)/67 आर० एच०-5 दिनांक 30 जनवरी 1968 । No. 3(5)/67-RH-V, dated 5th February, 1968.	श्रम, रोजगार तथा पुनर्वासि मंत्रालय Ministry of Labour, Employment and Rehabilitation.	एक पुनर्वासि बोर्ड की स्थापना । Constitution of a Board of Rehabilitation.
22.	No. 21—ITC(PN)/68, dated 6th February, 1968. No. 22—ITC (PN)/68, dated 6th February, 1968.	Ministry of Commerce.	Import policy for Registered Exporters for the year April, 1967—March, 1968. Import policy for Registered Exporters for the year April, 1967—March, 1968.
23.	No. 20(1)—TAR/68, dated 7th February, 1968. सं. 20(1)—टैरिफ/68 दिनांक 7 फरवरी 1968	Do. Do. वाणिज्य मंत्रालय	Sugar Enquiry Commission. चीनी जांच आयोग
24.	No. 23—ITC (PN)/68, dated 7th February, 1968. No. 24—ITC (PN)/68, dated 7th February, 1968. No. 25—ITC (PN)/68, dated 7th February, 1968. No. 26—ITC (PN)/68, dated 7th February, 1968.	Ministry of Commerce Do. Do. Do.	Conditions for licensing under Belgian Govt. credit & Belgian suppliers' credit. Import policy for Registered Exporters for the year April, 1967—March, 1968. Import policy for Registered Exporters for the year April, 1967—March 1968. Import policy for Registered, Exporters for the year April, 1967—March, 1968.
25.	No. 1—HRSC (1)/67, dated 6th December, 1967. No. 1—HRSC (1)/67, dated 7th February, 1968.	Ministry of Tourism & Civil Aviation Do.	The Hotel Review and Survey Committee. The Hotel Review and Survey Committee.

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## भाग I—खण्ड 1

## PART I—SECTION 1

(रक्षा मंत्रालय को छोड़कर) भारत सरकार के मंत्रालयों और उच्चतम न्यायालय द्वारा जारी की गई विधितर नियमों, विनियमों तथा आदेशों और संकल्पों से सम्बन्धित अधिसूचनाएं

**Notifications relating to Non-Statutory Rules, Regulations, Orders and Resolutions issued by the Ministries of the Government of India (other than the Ministry of Defence) and by the Supreme Court**

## राष्ट्रपति सचिवालय

नई दिल्ली, दिनांक 22 फरवरी 1968

सं० 13-प्रेष/68—राष्ट्रपति ने रक्षा मंत्री को सेनाध्यक्ष द्वारा प्रेषित प्रेषणों में उल्लिखित निम्नांकित अधिकारियों तथा अन्य पदाधिकारियों के नामों को भारतीय राजपत्र में प्रकाशित करने का आदेश दिया है :—

## सितम्बर 1967 की नायुला सिक्किम संक्रियायें

- मेजर बलवन्त सिंह (आई० सी०-4552)—18 राजपूत ।
- मेजर बलवीर सिंह चौधरी (आई० सी०-14217)—2 ग्रेनेडियर्स ।
- मेजर सिरबन्स सिंह चिमा (आई० सी०-12354)—इंजीनियर्स ।
- 2944395 लांस हवलदार महेन्द्र सिंह, 18 राजपूत ।
- 1165362 नायक (ओ० आर० ए०)—बलवीर सिंह, आटिलरी ।
- 2640246 नायक जवाहर सिंह, 2 ग्रेनेडियर्स ।
- 1223899 लांस नायक केशव सिंह, आटिलरी ।
- 1428111 यू० पी० एल० नायक प्रताप सिंह, इंजीनियर्स ।
- 6801437 लांस नायक नर्सिंग असिस्टेंट भरत सिंह, आर्मी मेडिकल कोर ।
- 13807512 सिपाही (झाड़वर) इथापिरी लाजार देवासी, आर्मी मेडिकल कोर ।
- 13807967 सिपाही (झाड़वर) जय नन्द, आर्मी मेडिकल कोर ।

नागेंद्र सिंह, राष्ट्रपति के सचिव

## समाज-कल्याण विभाग

नई दिल्ली, दिनांक 15 फरवरी 1968

## संकल्प

सं० एफ० 1-100/65-एस० डब्ल्यू०-3—शिक्षा मंत्रालय के दिनांक 7 फरवरी 1963, की अधिसूचना सं० एफ० 1-20/62-एस० डब्ल्यू०-3, जिसके द्वारा केन्द्रीय समाज कल्याण बोर्ड का 3 वर्ष की अवधि के लिए पुनर्गठन किया गया था, तथा उसके बाद की अधिसूचनाओं, जिनके द्वारा समय-समय पर उसकी अवधि बढ़ाई गई, का अधिक्रमण करते हुए केन्द्रीय सरकार ने 16 फरवरी, 1968 से केन्द्रीय समाज कल्याण बोर्ड का पुनर्गठन,

आगामी आदेश तक, करने का निश्चय किया है । पुनर्गठित बोर्ड का संयोजन इस प्रकार होगा :—

- (1) एक प्रमुख सामाजिक कार्यकर्ता अध्यक्ष होगा ।
- (2) नीचे दिए गए व्योरे के अनुसार 29 अन्य सदस्य होंगे :—
  - (क) 17 प्रमुख सामाजिक कार्यकर्ता; प्रत्येक राज्य से एक ।
  - (ख) संघ-क्षेत्रों से एक सदस्य ।
  - (ग) लोक सभा के दो प्रतिनिधि (लोक सभा के अध्यक्ष द्वारा नामजद किए जायेंगे) ।
  - (घ) राज्य सभा का एक प्रतिनिधि (राज्य सभा के अध्यक्ष द्वारा नामजद किया जायेगा) ।
  - (ङ) समाज कल्याण कार्यक्षेत्र के 3 विशेषज्ञ ।
  - (च) 5 सरकारी सदस्य—वित्त मंत्रालय, स्वास्थ्य और परिवार नियोजन मंत्रालय, समाज कल्याण विभाग, सामुदायिक विकास विभाग तथा योजना आयोग से एक-एक ।

2. पुनर्गठित बोर्ड के सदस्य ये होंगे :—

- (1) श्रीमती अली अहीर (अध्यक्ष)
- (2) श्रीमती कोंडा पार्वती देवी (आंध्र प्रदेश)
- (3) कुमारी इन्दुसती चिमनलाल शेट (गुजरात)
- (4) श्रीमती आयशा बाई (केरल)
- (5) श्रीमती विशाखा दीक्षित (मध्य प्रदेश)
- (6) श्रीमती मेरी बलबवाला जादव (मद्रास)
- (7) श्रीमती कुसुम बांखेड़े (महाराष्ट्र)
- (8) श्रीमती लीला रेणुका प्रसाद (मैसूर)
- (9) श्रीमती इन्दु बाला सुखाड़िया (राजस्थान)
- (10) श्रीमती अशोक गुप्ता (पश्चिम बंगाल)
- (11) डा० महावीर (दिल्ली)
- (12) असम से एक सदस्य (बाद में नामजद किया जायेगा)
- (13) बिहार से एक सदस्य (बाद में नामजद किया जायेगा)
- (14) जम्मू-काश्मीर से एक सदस्य (बाद में नामजद किया जायेगा)

- (15) हरियाणा से एक सदस्य (बाद में नामजद किया जायेगा)
- (16) नागालैण्ड से एक सदस्य (बाद में नामजद किया जायेगा)
- (17) उड़ीसा से एक सदस्य (बाद में नामजद किया जायेगा)
- (18) पंजाब से एक सदस्य (बाद में नामजद किया जायेगा)
- (19) उत्तर प्रदेश से एक सदस्य (बाद में नामजद किया जायेगा)
- (20) लोक सभा से दो सदस्य (बाद में नामजद किए जायेंगे)
- (21) राज्य सभा से एक सदस्य (बाद में नामजद किया जायेगा)
- (22) डा० जे० एफ० बुलसारा ।
- (23) प्रा० डी० के० सान्याल (समाज कल्याण और व्यवसाय प्रबन्ध का भारतीय संस्थान, कलकत्ता)
- (24) श्री राजाराम शास्त्री, (उपकुलपति, काशी विद्यापीठ, वाराणसी)
- (25) श्री कैलाश चन्द्र, आयुक्त, समाज कल्याण । (समाज कल्याण विभाग के प्रतिनिधि)
- (26) श्री ए० पी० वी० कृष्णन, संयुक्त सचिव, वित्त मंत्रालय (वित्त मंत्रालय के प्रतिनिधि)
- (27) डा० एन० ए० आगा, संयुक्त सचिव; खाद्य, कृषि, सामुदायिक विकास और सहकारिता मंत्रालय । (सामुदायिक विकास विभाग)
- (28) डा० दीपक भाटिया, आयुक्त, परिवार नियोजन स्वास्थ्य और परिवार नियोजन मंत्रालय ।
- (29) डा० डी० के० महहोत्रा, संयुक्त सचिव, योजना आयोग ।

3. आदेश दिया जाता है कि संकल्प भारत के राजपत्र में छपे ।

4. आदेश दिया जाता है कि संकल्प की प्रति इन को भेजी जायें :—

- (1) केन्द्रीय समाज कल्याण बोर्ड के सभी सदस्य ।
- (2) सभी राज्य सरकारें तथा संघ-क्षेत्र ।
- (3) भारत सरकार के सभी मंत्रालय/विभाग ।
- (4) लोक सभा सचिवालय ।
- (5) राज्य सभा सचिवालय ।
- (6) प्रधान-मंत्री सचिवालय ।
- (7) प्रेस सूचना केन्द्र ।
- (8) केन्द्रीय राजस्व के महालेखाकार ।
- (9) सचिव, केन्द्रीय समाज कल्याण बोर्ड । (35 अतिरिक्त प्रतियों सहित )

वी० एम्० रामदास, उप सचिव

### गृह मंत्रालय

नई दिल्ली-11, दिनांक 19 फरवरी 1968

सं० 9/19/67-पी० IV—राष्ट्रपति मध्य प्रदेश पुलिस के निम्नांकित अधिकारियों को नागालैण्ड के विशेष भागों में कार्य करने के उपलक्ष में पुलिस कठिन सेवा पदक प्रदान करते हैं ।

क्रम संख्या	व्यक्तिगत संख्या	पद	नाम
1	2	3	4
1.		कमाण्डेन्ट	प्रताप सिंह
2.		असिस्टेन्ट कमाण्डेन्ट	एस० एस० गुप्ता
3.		"	आर० एस० राठीर
4.		प्लाटून कमाण्डर	वी० नटल
5.		"	एन० के० चक्रवर्ती
6.		"	एच० सी० सिंह
7.		"	कृष्ण सिंह
8.	428	हेड कानस्टेबल	लखमन
9.	307	"	परस राम
10.	370	"	मंगल सिंह
11.	98	"	धन बहादुर
12.	284	"	राम बहादुर
13.	638	"	प्रभाकर दत्त
14.	263	"	नाना जसवन्त
15.	218	"	पी० सी० बनर्जी
16.	339	कानस्टेबल	सुख राम
17.	141	"	पूरन सिंह
18.	252	"	राम बदन
19.	509	"	सुखबीर
20.	165	"	कर्ण सिंह
21.	247	"	धुरहू राम
22.	330	"	अर्जुन राम
23.	390	"	गुरू प्रसाद
24.	546	"	मही लाल
25.	619	"	भोगी राम
26.	192	"	स० अदरूनाचलन
27.	122	"	राम प्रसाद
28.	628	"	काशीनाथ मिश्रा
29.	648	"	राम खिलाने

1	2	3	4
30.	497	कानस्टेबल	राम कुमार
31.	464	"	उमेश सिंह
32.	302	"	कुल बहादुर
33.	271	"	छोटे सिंह
34.	67	"	बाल सिंह
35.	598	"	राम लाल
36.	179	"	देवेन्द्रपाल
37.	352	"	मारुती भोले
38.	207	"	शिव मोहन
39.	311	"	महादेव प्रसाद
40.	110	"	कुल बहादुर
41.	260	"	कोट यान
42.	66	"	रामेश्वर सिंह
43.	265	"	रामानुज
44.	45	"	नामदेव पाटिल
45.	32	"	नन्दन सिंह
46.	494	"	अब्दुल अजीज
47.	595	"	विजय सिंह
48.	607	"	मनीराम
49.	476	"	बालम सिंह
50.	225	"	सरदार सिंह
51.	335	"	पान सिंह
52.	228	"	इन्द्र सिंह
53.	454	"	त्रिलोक सिंह
54.	184	"	दरोगा सिंह
55.	289	"	घोम सिंह
56.	65	"	चिंतामणि
57.	233	"	गंगा धर
58.	615	"	कुवरपाल सिंह
59.	520	"	कुलानन्द
60.	116	"	राम खिलावन
61.	188	"	लाल सिंह
62.	630	"	बाबू सिंह
63.	205	"	शार सिंह
64.	490	"	आनन्द सिंह
65.	644	"	काली चरण
66.	186	"	विद्या दत्त
67.	655	"	खुम बहादुर
68.	321	"	यम लाल
69.	573	"	लायक सिंह
70.	387	"	रणवीर सिंह
71.	320	"	मांगी लाल
72.	56	"	हरी शंकर
73.	1235	नानकम्बेदेन्ट कानस्टेबल	गणेश राम
74.	1233	"	भृगू राम
75.	1245	"	राम साही
76.	1259	"	दुखत

1	2	3	4
77.	1228	नानकम्बेदेन्ट	छोटे लाल
78.	1216	कानस्टेबल	रामाजोर

2. ये पदक पुलिस कठिन सेवा पदक नियमावली के नियम 1 के अन्तर्गत दिये जा रहे हैं।

गौरी शंकर कपूर, अवसर सचिव

#### शिक्षा मंत्रालय

नई दिल्ली, दिनांक 19 फरवरी 1968

सं० एफ० 12-3/65-सी० ए० I(3)—शिक्षा मंत्रालय, भारत सरकार के संकल्प सं० एफ० 12-3/65-सी०-3, दिनांक 28-3-1966 के पैरा 3 की धारा (xiii) के अन्तर्गत, हरियाणा, प्रांतीय पुरातत्व संग्रहालय, पो० गुरुकुल झज्जर, जिला रोहतक (हरियाणा) के अध्यक्ष आचार्य भगवान देव को, बोर्ड में हरियाणा सरकार का प्रतिनिधित्व करने के लिये 27 मार्च 1969 को समाप्त होने वाली अवधि तक के लिए केन्द्रीय संग्रहालय सलाहकार बोर्ड के एक सदस्य के रूप में नियुक्त किया गया है।

पी० गांगुली, उप सचिव

#### संचार विभाग

##### (डाक तार बोर्ड)

नई दिल्ली, दिनांक 27 नवम्बर 1967

विषय :—डाकतार विभाग के लिए शुल्कदर जांच समिति।

सं० 1-1/67-टी० ई० सी०—श्री एम० आर० कृष्ण संसद सदस्य की रक्षा मंत्रालय में उपमंत्री के रूप में नियुक्ति होने के परिणामस्वरूप श्री द्वैपायन सेन, संसद सदस्य को डाकतार शुल्कदर समिति का सदस्य नियुक्त करते हुए सरकार को प्रसन्नता है। यह अधिसूचना दिनांक 4 अगस्त 1967 के प्रस्ताव संख्या 13-1/67-आर० के आंशिक संशोधन के रूप में है।

एम० दयाल, अध्यक्ष डाकतार बोर्ड

#### आदेश

आदेश दिया जाता है कि अधिसूचना को सामान्य जानकारी के लिए भारत के राजपत्र में प्रकाशित किया जाए।

मदनकिशोर, सदस्य डाकतार बोर्ड, एवं भारत सरकार के पदेन संयुक्त सचिव

नई दिल्ली, दिनांक 20 जनवरी 1968

#### प्रस्ताव

विषय :—डाकतार विभाग के लिए शुल्कदर जांच समिति।

सं० 1-1/67-टी० ई० सी०—शुल्कदर जांच समिति की, अपनी रिपोर्ट देने के लिए, सेवावधि में 3 माह की वृद्धि मंजूर करते हुए सरकार को प्रसन्नता है। यह प्रस्ताव, 4 अगस्त, 1967 के प्रस्ताव, संख्या 13/1/67-आर० के पैरा 13 के आंशिक संशोधन के रूप में है।

एल० सी० जैन, सचिव,

संचार एवं अध्यक्ष डाकतार बोर्ड

#### आदेश

आदेश दिया जाता है कि प्रस्ताव को सामान्य जानकारी के लिए भारत के राजपत्र में प्रकाशित किया जाए।

मदन किशोर, सदस्य (बैंकिंग और बीमा)

डाकतार बोर्ड और भारत सरकार के पदेन संयुक्त सचिव

**PRESIDENT'S SECRETARIAT***New Delhi, the 22nd February 1968*

No. 13-Pres./68.—The President has been pleased to give orders for publication in the Gazette of India of the names of the following officers and other ranks mentioned in the despatches received by the Defence Minister from the Chief of the Army Staff :—

*Operations at Nathula, Sikkim, in September 1967*

1. Major BALWANT SINGH (IC-4552), 18 Rajput.
2. Major DALBIR SINGH CHAUDHRI (IC-14217), 2 Grenadiers.
3. Major SIRBANS SINGH CHIMA (IC-12354), Engineers.
4. 2944395 Lance Havildar MAHENDRA SINGH, 18 Rajput.
5. 1165362 Naik (ORA) BALBIR SINGH, Artillery.
6. 2640246 Naik JAWAHAR SINGH, 2 Grenadiers.
7. 1223899 Lance Naik KESHAVE SINGH, Artillery.
8. 1428111 U/P/L Naik PRATAP SINGH, Engineers.
9. 6801437 Lance Naik Nursing Assistant BHARAT SINGH, Army Medical Corps.
10. 13807512 Sepoy (Driver) ITHAPIRY LAZAR DEVASSY, Army Medical Corps.
11. 13807967 Sepoy (Driver) JAI NAND, Army Medical Corps.

NAGENDRA SINGH, Secy.  
to the President

**DEPARTMENT OF SOCIAL WELFARE***New Delhi-1, the 15th February 1968***RESOLUTION**

No. F.1-100/65-SW-3.—In supersession of the Ministry of Education Notification No. F.1-20/62-SW-3, dated 7th February, 1963 reconstituting the Central Social Welfare Board for a period of three years and subsequent notifications extending its term from time to time, the Government of India have decided to reconstitute the Central Social Welfare Board with effect from the 16th February, 1968, until further orders. The composition of the reconstituted Board will be as follows :—

- (1) One prominent social worker as Chairman.
- (2) Twenty nine other members as per details below; viz. :—
  - (a) 17 prominent social workers, one from each State;
  - (b) 1 prominent social worker from the Union Territories;
  - (c) 2 representatives from the Lok Sabha (to be nominated by the Speaker);
  - (d) 1 representative from the Rajya Sabha (to be nominated by the Chairman, Rajya Sabha);
  - (e) 3 experts in the field of Social Welfare; and
  - (f) 5 official members, one each from the Ministry of Finance, Ministry of Health and Family Planning, Department of Social Welfare, Department of Community Development and the Planning Commission.

2. The following will be the members of the reconstituted Board :—

1. Smt. Ali Zaheer (Chairman)
2. Smt. Konda Parvati Devi (Andhra Pradesh)
3. Kumari Indumati Chimanlal Sheth (Gujarat)
4. Smt. Aysha Bai (Kerala)
5. Smt. Vishakha Dixit (Madhya Pradesh)
6. Smt. Mary Clubwala Jadav (Madras)
7. Smt. Kusum Wankhede (Maharashtra)

8. Smt. Leela Renuka Prasad (Mysore)
9. Smt. Indu Bala Sukhadia (Rajasthan)
10. Smt. Asoka Gupta (West Bengal)
11. Dr. Mahavir (Delhi)
12. One member from Assam (to be nominated later)
13. One member from Bihar (to be nominated later)
14. One member from Jammu & Kashmir (to be nominated later)
15. One member from Haryana (to be nominated later)
16. One member from Nagaland (to be nominated later)
17. One member from Orissa (to be nominated later)
18. One member from Punjab (to be nominated later)
19. One member from Uttar Pradesh (to be nominated later)
20. Two members from Lok Sabha (to be nominated later)
21. One member from Rajya Sabha (to be nominated later)
22. Dr. J. F. Bulsara.
23. Prof. D. K. Sanyal (Indian Institute of Social Welfare and Business Management, Calcutta)
24. Shri Rajaram Shastri, Vice-Chancellor, Kaashi Vidya-peeth, Varanasi
25. Shri Kailash Chandra, Commissioner of Social Welfare (representative of the Department of Social Welfare)
26. Shri A. P. V. Krishnan, Joint Secretary, Ministry of Finance (representative of the Ministry of Finance)
27. Dr. N. A. Agha, Joint Secretary, Ministry of Food, Agriculture, Community Development & Cooperation. (Department of Community Development)
28. Dr. Dipak Bhatia, Commissioner, Family Planning, Ministry of Health and Family Planning.
29. Dr. D. K. Malhotra, Joint Secretary, Planning Commission.

**ORDER**

3. ORDERED that the Resolution be published in the Gazette of India.
4. ORDERED also that a copy of the Resolution be forwarded to :—

1. All the members of the Central Social Welfare Board.
2. All State Governments and Union Territories.
3. All Ministries/Departments of the Government of India.
4. Lok Sabha Secretariat.
5. Rajya Sabha Secretariat.
6. Prime Minister's Secretariat.
7. Press Information Bureau.
8. Accountant General, Central Revenues.
9. Secretary, Central Social Welfare Board. (with 35 spare copies)

B. S. RAMDAS, Dy. Secy.

**MINISTRY OF HOME AFFAIRS***New Delhi-1, the 16th February 1968*

No. 3/11/67-Nefa.—The President is pleased to re-employ Shri N. K. Ramaswami, retired Assistant Secretary to the Govt. of Madras, Agriculture (Co-operation) Deptt., Fort St. George as Officer on Special Duty in the scale of Rs. 350-2-650 in the Ministry of Home Affairs with effect from the forenoon of the 23rd October, 1967 until further orders.

S. C. DUTTA, Dy. Secy.

*New Delhi-11, the 19th February, 1968*

No. 9/19/67-P.IV.—The President is pleased to award the Police (Special Duty) Medal to the following officers of Madhya Pradesh Police in recognition of their services in the specified areas of Nagaland :—

S. No.	Personal Number	Rank	Name
1.		Commandant	Pratap Singh
2.		Assistant Commandant	S. S. Gupta
3.		-do-	R. S. Rathore
4.		Platoon] Commander	V. Nuttal
5.		"	N. K. Chakravorty
6.		"	H. C. Singh
7.		"	Krishna Singh
8.	428	Head Constable	Lakhman
9.	307	"	Parasram
10.	370	"	Mangal Singh
11.	98	"	Dhan Bahadur
12.	284	"	Ram Bahadur
13.	638	"	Prabhakar Dutt
14.	263	"	Nana Jaswant
15.	218	"	P. C. Banerjee
16.	339	Constable	Sukhram
17.	141	"	Puran Singh
18.	252	"	Rambadan
19.	509	"	Sukhbir
20.	165	"	Karan Singh
21.	247	"	Ghurhu Ram
22.	330	"	Arjun Ram
23.	390	"	Guru Prasad
24.	546	Constable	Mahilal
25.	619	"	Bhogiram
26.	192	"	S. Adrunachalan
27.	122	"	Ram Prasad
28.	628	"	Kashinath Mishra
29.	648	"	Ramkhilawan
30.	497	"	Ramkumar
31.	464	"	Umed Singh
32.	302	"	Kul Bahadur
33.	271	"	Chhote Singh
34.	67	"	Bal Singh
35.	598	"	Ram Lal
36.	179	"	Devendrapal
37.	352	"	Maruti Bhole
38.	207	"	Shivmohan
39.	311	"	Mahadeo Prasad
40.	110	"	Kulbahadur
41.	260	"	Kotyan
42.	66	"	Rameshwar Singh
43.	265	"	Ramanuj
44.	45	"	Namdeo Patil
45.	32	"	Nandan Singh
46.	494	"	Abdul Aziz
47.	595	"	Vijai Singh
48.	607	"	Maniram
49.	476	"	Balam Singh
50.	225	"	Sardar Singh
51.	335	"	Pan Singh
52.	228	"	Indra Singh
53.	454	"	Trilok Singh
54.	184	"	Daroga Singh
55.	289	"	Ghom Singh
56.	65	"	Chintamani

1	2	3	4
57.	233	Constable	Gangadhar
58.	615	"	Kuwarpal Singh
59.	520	"	Kulanand
60.	116	"	Ramkhilawan
61.	188	"	Lalsingh
62.	630	"	Babu Singh
63.	203	"	Jhar Singh
64.	490	"	Anand Singh
65.	644	"	Kalicharan
66.	186	"	Vidya Dutt
67.	655	"	Khum Bahadur
68.	321	"	Yamlal
69.	573	"	Layak Singh
70.	387	"	Ranbir Singh
71.	320	"	Mangllal
72.	56	"	Harishankar
73.	1235	Non-combatant Constable	Ganeshram
74.	1233	"	Bhriguram
75.	1245	"	Ram Sahi
76.	1259	"	Dukhan
77.	1228	"	Chhotelal
78.	1216	"	Ramajor

These awards are being made under rule 1 of the rules governing the award of the Police (Special Duty) Medal.

G. S. KAPOOR, *Under Secretary.*

#### MINISTRY OF STEELS, MINES AND METALS

(Department of Mines and Metals)

*New Delhi, the 2nd March 1968*

No. 6/33/67-MIII.—The rules for a competitive examination to be held by the Union Public Service Commission in August, 1968, for recruitment to temporary vacancies in the following posts in the Geological Survey of India are published for general information :—

(i) Geologist (Junior), Class I, and

(ii) Assistant Geologist, Class II.

Appointments on the results of the examination will be made on a temporary basis in the first instance. The candidates will be eligible for permanent appointment in their turn as and when permanent vacancies become available,

2. The examination will be conducted by the Union Public Service Commission in the manner prescribed in Appendix I to these Rules.

The dates on which and the places at which the examination will be held shall be fixed by the Commission.

3. A candidate must be either :—

- a citizen of India, or
- a subject of Sikkim, or
- a subject of Nepal, or
- a subject of Bhutan, or
- a Tibetan refugee who came over to India, before the 1st January, 1962, with the intention of permanently settling in India, or
- a person of Indian origin who has migrated from Pakistan, Burma, Ceylon and East African countries of Kenya, Uganda and the United Republic of Tanzania (formerly Tanganyika and Zanzibar) with the intention of permanently settling in India.

Provided that candidate belonging to categories (c), (d), (e) and (f) above shall be a person in whose favour a certificate of eligibility has been issued by the Government of India.

Certificate of eligibility will not, however, be necessary in the case of candidates belonging to any one of the following categories :—

- (i) Persons who migrated to India from Pakistan before the nineteenth day of July, 1948 and have ordinarily been residing in India since then.
- (ii) Persons who migrated to India from Pakistan on or after the nineteenth day of July, 1948, and have got themselves registered as Citizens of India under Article 6 of the Constitution.
- (iii) Non citizens in category (f) above who entered service under the Government of India before the commencement of the Constitution, viz., 26th January, 1950, and who have continued in such service since then. Any such person who re-entered or may re-enter such service with break after the 26th January, 1950, will, however, require certificate of eligibility in the usual way.

A candidate in whose case a certificate of eligibility is necessary may be admitted to the examination and he may also provisionally be appointed subject to the necessary certificate being given to him by the Government.

4. (a) No male candidate who has more than one wife living or who having a spouse living, marries in any case in which such marriage is void by reason of its taking place during the life time of such spouse, shall be eligible for appointment to any of the posts, appointments to which are made on the results of this competitive examination, unless the Government of India, after being satisfied that there are special grounds for doing so, exempt any male candidate from the operation of this rule.

(b) No female candidate whose marriage is void by reason of the husband having a wife living at the time of such marriage or who has married a person who has a wife living at the time of such marriage shall be eligible for appointment to any of the posts, appointments to which are made on the results of this competitive examination, unless the Government of India, after being satisfied that there are special grounds for doing so, exempt any female candidate from the operation of this rule.

5. No candidate who does not belong to a Scheduled Caste or a Scheduled Tribe or is not a resident of the Union Territory of Pondicherry or is not a resident of the Union Territory of Goa, Daman and Diu or is not a migrant from Kenya, Uganda and the United Republic of Tanzania (formerly Tanganyika and Zanzibar) shall be permitted to compete more than four times at the examination; this restriction being effective from the examination held in January, 1964.

NOTE 1.—For the purpose of this rule, a candidate shall be deemed to have competed at the examination, once for both the posts covered by the examination, if he competes for any one of the posts.

NOTE 2.—A candidate shall be deemed to have competed at the examination if he actually appears in any one or more subjects.

6. (a) A candidate for this examination must have attained the age of 21 years and must not have attained the age of 26 years on 1st January, 1968, i.e., he must have been born not earlier than 2nd January, 1942, and not later than 1st January, 1947.

(b) The upper age limit of 26 years will be relaxable up to 30 years in respect of candidates who hold substantively permanent posts in the Geological Survey of India or have been continuously in temporary service in that Department for at least three years on 1st January, 1968.

(c) The upper age-limits prescribed above will be further relaxable :—

- (i) up to a maximum of five years if a candidate belongs to a Scheduled Caste or a Scheduled Tribe;
- (ii) up to a maximum of three years, if a candidate is a *bona fide* displaced person from East Pakistan and has migrated to India on or after 1st January, 1964;
- (iii) up to a maximum of eight years if a candidate belongs to a Scheduled Caste or a Scheduled Tribe and is also a *bona fide* displaced person from East Pakistan and has migrated to India on or after 1st January, 1964;

(iv) up to a maximum of three years if a candidate is a resident of the Union Territory of Pondicherry and has received education through the medium of French at some stage;

(v) up to a maximum of three years if a candidate is a *bona fide* repatriate of Indian origin from Ceylon and has migrated to India on or after 1st November, 1964, under the Indo-Ceylon Agreement of October, 1964;

(vi) up to a maximum of eight years if a candidate belongs to a Scheduled Caste or a Scheduled Tribe and is also a *bona fide* repatriate of Indian origin from Ceylon and has migrated to India on or after 1st November, 1964, under the Indo-Ceylon Agreement of October, 1964;

(vii) up to a maximum of three years if a candidate is a resident of the Union Territory of Goa, Daman and Diu;

(viii) up to a maximum of three years if a candidate is of Indian origin and has migrated from Kenya, Uganda and the United Republic of Tanzania (formerly Tanganyika and Zanzibar);

(ix) up to a maximum of three years if a candidate is a *bona fide* repatriate of Indian origin from Burma and has migrated to India on or after 1st June, 1963;

(x) up to a maximum of eight years if a candidate belongs to a Scheduled Caste or a Scheduled Tribes and is also a *bona fide* repatriate of Indian origin from Burma and has migrated to India on or after 1st June, 1963;

(xi) upto a maximum of three years in the case of Defence Services personnel disabled in operations during hostilities with any foreign country or in a disturbed area, and released as a consequence thereof; and

(xii) up to a maximum of eight years in the case of Defence Services personnel, disabled in operations during hostilities with any foreign country or in a disturbed area and released as a consequence thereof, who belong to the Scheduled Castes and the Scheduled Tribes.

SAVE AS PROVIDED ABOVE THE AGE LIMITS PRESCRIBED CAN IN NO CASE BE RELAXED.

N.B. (i) The candidature of a person who is admitted to the examination under the age concession mentioned in Rule 6(b) above, is liable to be cancelled, if after submitting his application, he resigns from service or his services are terminated by his department, either before or after taking the examination. He will, however, continue to be eligible if he is retrenched from his post after submitting the application.

(ii) A candidate who, after submitting his application to his department, is transferred to other department/office, will be eligible to compete under departmental age concession for the post(s), for which he would have been eligible, but for his transfer, provided his application, duly recommended, has been forwarded by his parent department.

7. A candidate already in Government Service, whether in a permanent or a temporary capacity, must obtain prior permission of the Head of the Department to appear for the Examination.

8. A candidate must have—

- (a) M.Sc. degree in Geology or Applied Geology from a University incorporated by an Act of the Central or State Legislature in India or other educational institutes established by an Act of Parliament or declared to be deemed as Universities under Section 3 of the University Grants Commission Act, 1956; or
- (b) Diploma of Associateship in Applied Geology of the Indian School of Mines, Dhanbad.

NOTE 1. A candidate who has appeared at an examination the passing of which would render him eligible to appear at this examination but has not been informed of the result may apply for admission to the examination. A candidate who intends to appear at such a qualifying examination may also apply, provided that the qualifying examination is com-



pleted before the commencement of this examination. Such candidates will be admitted to the examination, if otherwise eligible, but the admission would be deemed to be provisional and subject to cancellation if they do not produce proof of having passed the examination, as soon as possible, and in any case not later than two months after the commencement of this examination.

NOTE II.—In exceptional cases, the Commission may treat a candidate, who has not any of the qualifications prescribed in this rule, as educationally qualified provided that he has passed examinations conducted by other institutions, the standard of which, in the opinion of the Commission, justifies his admission to the examination.

NOTE III.—A candidate who is otherwise eligible but who has taken a degree from a Foreign University, may also apply to the Commission and may be admitted to the examination at the discretion of the Commission.

9. A candidate must be in good mental and bodily health and free from any physical defect likely to interfere with the discharge of the duties of the post. A candidate who after such physical examination as Government or the appointing authority, as the case may be, may prescribe is found not to satisfy those requirements will not be appointed. Only candidates who are likely to be considered for appointment will be physically examined. Candidates will have to pay a fee of Rs. 16.00 to the Medical Board concerned at the time of the Medical examination.

NOTE.—In order to prevent disappointment candidates are advised to have themselves examined by a Government Medical Officer of the standing of a Civil Surgeon before applying for admission to the examination. Particulars of the nature of the medical test to which candidates will be subjected before appointment to Gazetted posts and of the standards required are given in Appendix II. For the disabled ex-Defence Services personnel, the standards will be relaxed consistent with the requirements of the posts.

10. The decision of the Commission as to the eligibility or otherwise of a candidate for admission to the examination shall be final.

11. No candidate shall be admitted to the examination unless he holds a certificate of admission from the Commission.

12. Candidates must pay the fee prescribed in Annexure I to the Commission's Notice.

13. Any attempt on the part of a candidate to obtain support for his candidature by any means may disqualify him for admission.

14. A candidate who is or has been declared by the Commission guilty of impersonation or of submitting fabricated documents or documents which have been tampered with or of making statements which are incorrect or false or of suppressing material information or otherwise resorting to any other irregular or improper means for obtaining admission to the examination, or of using or attempting to use unfair means in the examination hall or of misbehaviour in the examination hall, may in addition to rendering himself liable to criminal prosecution.—

(a) be debarred permanently or for a specified period :—

(i) by the Commission from admission to any examination or appearance at any interview held by the Commission for selection of candidates; and

(ii) by the Central Government from employment under them;

(b) be liable to disciplinary action under the appropriate rules, if he is already in service under Government.

15. Reservation will be made for candidates belonging to the Scheduled Castes and the Scheduled Tribes in respect of vacancies as may be fixed by Government of India.

Scheduled Castes/Tribes mean any of the Castes/Tribes mentioned in the Scheduled Castes/Tribes Lists (Modification) Order, 1956, read with Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1956, the Constitution (Jammu and Kashmir), Scheduled Castes Order, 1956, the Constitution (Andaman & Nicobar Islands) Scheduled Tribes Order, 1959, the Constitution (Dadra and Nagar Haveli)

Scheduled Castes Order, 1962, the Constitution (Dadra and Nagar Haveli) Scheduled Tribes Order, 1962, the Constitution (Pondicherry) Scheduled Castes Order, 1964 and the Constitution (Scheduled Tribes) (Uttar Pradesh) Order 1967.

16. After the examination the candidates will be arranged by the Commission in the order of merit as disclosed by the aggregate marks finally awarded to each candidate and in that order so many candidates as are found by the Commission to be qualified by the examination shall be recommended for appointment up to the number of unreserved vacancies decided to be filled on the results of the examination.

Provided that any candidate belonging to the Scheduled Castes or the Scheduled Tribes, who though not qualified by the standard prescribed by the Commission for any post, is declared by them to be suitable for appointment thereto with due regard to the maintenance of efficiency of administration, shall be recommended for appointment to vacancies reserved for members of the Scheduled Castes or the Scheduled Tribes, as the case may be, in that post.

17. The form and manner of communication of the result of the examination to individual candidates shall be decided by the Commission in their discretion and the Commission will not enter into correspondence with them regarding the result.

18. Success in the examination confers no right to appointment, unless Government are satisfied after such enquiry as may be considered necessary, that the candidate is suitable in all respects for appointment to the post.

19. Conditions of Service relating to the posts to which recruitment is being made through this examination are briefly stated in Appendix III.

A. SETHUMADHAVAN, Under Secy.

#### APPENDIX I

1. The subjects of the examination, the time allowed and the maximum marks for each subject will be as follows:—

Subject	Time allowed	Maximum Marks
<b>A. Compulsory:—</b>		
(i) English (including essay and precls-writing)	3 hrs.	100
(ii) General Knowledge and Current Affairs	2 hrs.	100
(iii) Geology I— Mineralogy, Petrology, Economic Geology, Structural Geology	3 hrs.	150
(iv) Geology II— General Geology, Palaeontology, Stratigraphy, Sedimentology	3 hrs.	150
<b>B. Optionals:—</b>		
Paper I—Any one of the following	3 hrs.	200
(1) Indian Stratigraphy		
(2) Petrology, Igneous, Sedimentary and Metamorphic.		
Paper II—Any one of the following	3 hrs.	200
(1) Ore Genesis and Metallic and Non-Metallic minerals.		
(2) Engineering Geology and Ground water Geology		
(3) Elementary Mining Methods, and recovery of metals and minerals.		
<b>C. Additional Optionals (For Class I posts only)</b>		
Any two of the following	3 hrs. each	200 each
(1) Mining Geology, Ore Beneficiation and Mineral Economics		

- (2) Geology of Coal and Oil
- (3) Exploration Geophysics
- (4) Geochemistry, Photogeology, Nuclear Geology.
- (5) Tectonics
- (6) Advanced Stratigraphy
- (7) Advanced Palaeontology

2. All papers must be answered in English.

3. Candidates must write the papers in their own hand. In no circumstances will they be allowed the help of a scribe to write answers for them.

4. The standard and syllabus of the examination will be as shown in the attached schedule.

5. The Commission have discretion to fix qualifying marks in any or all the subjects of the examination.

6. Marks will not be allotted for mere superficial knowledge.

7. Deductions up to 5 per cent of the maximum marks for the written subjects will be made for illegible handwriting.

8. Credit will be given for orderly, effective and exact expression combined with due economy of words in all subjects of the examination.

#### SCHEDULE TO APPENDIX I

##### Standard and Syllabus

The standard of the papers in English and General Knowledge and Current Affairs will be such as may be expected of a science graduate. The papers on geological subjects will be approximately of the M.Sc. degree standard of an Indian University, and questions will generally be set to test the candidates' grasp of the fundamental in each subject.

The standard of the Additional Optional Papers will require detailed knowledge as applicable to Geological problems.

There will be no practical examination in any of the subjects.

##### (1) English (including essay and precis-writing).

Questions to test the understanding of and the power to write English. Passages will usually be set for summary or precis.

##### (2) General Knowledge and Current Affairs.

General Knowledge including knowledge of current events and of such matters of every day observation and experience in their scientific aspects as may be expected of an educated person who has not made a special study of any scientific subject. The paper will also include questions on History of India and Geography of a nature which candidates should be able to answer without special study.

##### (3) Geology I

###### Section I

**Mineralogy.**—Systematic study of minerals in regard to their crystalline forms; physical, chemical and optical properties; their chemical composition and alteration products. General principles of optics, in relation to the study of minerals under the microscope. Modes of occurrence and origin of minerals.

###### Section II

**Petrology.**—Igneous rocks and their diversity. Theories of petrogenesis-differentiation and assimilation. Mechanism of intrusion and structures. Micro-structures and textures in relation to the modes of formation of igneous rocks; their classification and nomenclature and relation in space and time.

Sedimentary rocks; their origin, classification and nomenclature; their mineralogical, textural and structural characters and their petrographic interpretations.

Metamorphism; agents and kinds of metamorphism, grades and facies of metamorphism; their characteristic features, additive and metasomatic aspects of metamorphism. Metamorphic rocks and their nomenclature.

###### Section III

**Economic Geology.**—The processes of ore genesis; different classifications of mineral deposits. Mineral paragenesis and structural relations. A study of metallic ores, fuels, non-metallic (or industrial) minerals, rare minerals, Building and ornamental stones and road materials, and precious and semi-precious stones in regard to their origin, occurrence, distribution and uses.

###### Section IV

**Structural Geology.**—Physical properties of rocks; stress and strain ellipsoid, deformation and mechanics of deformation. Lineation and criteria for recognizing tops and bottoms of beds to determine order of superposition; conformable and unconformable beds, overlap, dip strike and outcrop, variation in outcrops with reference to dip of bed and slope of valleys.

Classification and description of folds, recognition of folds in the field, causes and mechanics of folding.

Classification and description of faults, effects of faults on outcrops, Criteria for recognition of faults, causes and mechanics of faulting.

Unconformities, inliers, outliers, nappes, windows and criteria for their recognition. Joints, their types and significance.

NOTE.—Candidates may be required to answer a specified number of questions from each of the above Sections.

##### (4) Geology II

###### Section I

**General Geology.**—The history and development of the science of geology and its different branches; the aims, methods and applications of geology. The earth; theories of the origin and evolution of the earth, of its interior and of its age.

Radioactivity and geology. Igneous action and its manifestations.

Atmosphere, Hydrosphere, Lithosphere, and their constituents.

Geological agents—Hypogene-Igneous activity, volcanoes, their form and structure, their action, causes, results and products, and volcanic belts of the world. Earthquakes—nature, origin and effects relationship to volcanoes and earthquake belts of the world. Seismology—Principles, instruments and records.

Epigene—heat and cold, water, wind, ice and organic agents; erosion, transportation and deposition considered with each of the agents.

Mountains, their origin and structure, geosynclines, isostasy. Glaciers, rivers and lakes; continental drift. Evolution of continents and oceanic basins.

###### Section II

**Palaeontology.**—Fossils, their nature and modes of preservation and uses. Distribution of the main groups in time. Fauna and flora in relation to the past climates and geography. Importance of the study of fossils in problems of evolution. Study of the important genera of the invertebrate, vertebrate and plant fossils.

###### Section III

**Stratigraphy.**—Principles of classification and correlation of geological formation. Standard European geological formations—their lithological and palaeontological characters. Study of Indian stratigraphy likewise but in greater detail; physiographic and climatic conditions of the different epochs and systems. General knowledge of the foreign equivalents of Indian formations.

###### Section IV

**Sedimentology.**—The origin of sediments, characters of deposits: Terrestrial, fluvial, marine, lacustrine, glacial, organic etc. Influence of environment of sedimentation; different types—sedimentary environments and their characteristic features. Palaeocurrents and their significance; Flysch and Molasse. Cycles of sedimentation and denudation.

NOTE.—Candidates may be required to answer a specified number of question from each of the above Sections.

**(5) Indian Stratigraphy**

Principles of stratigraphy—lithology, fossil content, order of superposition. Geological time scale; standard European Geological formations.

Chief divisions of Indian sub-continent—their physiographic stratigraphic and structural features. Climate, Peninsular and Extra-peninsular mountain ranges, rivers and lakes, glaciers.

Structure and Tectonics of Indian sub-continent; peninsula-Dharwar (Aravalli), Eastern Ghats, Satpura and Mahanadi strike trends and their relative ages. Extra-peninsula-Himalayan arc, Burmese arc, Baluchistan arc, Origin of the Himalayas and of the Gangetic plains.

Archaean group: Distribution in the different parts of Peninsula and the correlation of the Dharwar of the different peninsular regions. Extra-peninsular Archaeans. Mineral wealth of the Archaean.

Puranas—Cuddapah system and Vindhyan system, their stratigraphy and their economic minerals.

The Palaeozoic group; System from Cambrian to Carboniferous, distribution, geological succession, and fauna of each.

The Gondwana group: Introduction, nomenclature, extent. Two-fold division, Geological succession and details of stratigraphy. Igneous rocks, Gondwanas in other continents. Structure of the Gondwana basins. Climate and sedimentation. Permo-carboniferous flora. Palaeogeography. Economic minerals of Gondwanas. Gondwana coal-fields.

The Upper Carboniferous and Permian systems in Himalayan and sub-Himalayan regions and their fauna. Upper Palaeozoic unconformity.

The Triassic and Jurassic systems of the extra-peninsular region and Jurassics of Kutch; Stratigraphy and faunal characters in each.

The Cretaceous system of the extra-Peninsular region and of Narmada valley. Trichinopoly and other areas of the Peninsula. Igneous rocks and earth movements of Cretaceous.

Deccan traps: Distribution and extent. Structural features, Dykes and sills. Petrology, chemical characters, alteration and weathering of traps. Lameta Beds, Inter-Trappeans and Infra-Trappeans. Age. Economic geology.

The Tertiary group: Break up of Gondwana land. Rise of the Himalayas. Facies and distribution. The Eocene, Oligocene and Lower Miocene systems, their distributions, stratigraphy and fauna. Siwalik system—distribution, constitution, climatic conditions, organic remains, divisions correlation. The Plesitocene system—Divisions, glaciation, Indo-Gangetic Alluvium. Laterite. Recent changes of level along coasts.

**(6) Petrology, Igneous, Sedimentary and Metamorphic**

The scope of petrology, a systematic description of the more important groups of rocks.

The application of physical chemistry to igneous petrology. The phase rule, Equilibrium in silicate systems. Two component and three component systems. Order of crystallisation and intergrowths. Structures and textures of rocks and their interpretation. The crystallization of magmas. Diversity of igneous rocks. Petrographic provinces. Magma tectonics. Granitisation. Petrochemical calculations. Variation diagrams. Origin of a few important rock types.

Sedimentary rocks.—Their classification and characters. Sedimentary differentiation. The origin of sediments. Methods of study of sedimentary rocks, including sampling and separation of minerals of sedimentary rock sample; methods of representation of the results of sedimentary mineral analysis—mechanical analysis of sediments. The applications of sedimentary petrography as in provenance studies, palaeogeography, structural interpretation and in industry. Sedimentary environments.

Metamorphic rocks.—The scope of metamorphism. Agents of metamorphism. Types of metamorphism. The structures of metamorphic rocks. Grades and facies, composite, hybrid and injection gneisses. Metamorphism in relation to magma and orogeny.

**(7) Ore Genesis and Metallic and Non-Metallic Minerals**

Ore Genesis.—The magma in its relation to mineral deposits orthomagmatic deposits—pegmatic deposits—pyrometaso-

matic deposits—hypothermal, mesothermal and epithermal deposits.

Secondary enrichment: Oxidation, solution and precipitation the zone of oxidation—Oxidized deposits and gossans—secondary sulphide enrichment.

Secondary deposits.—Deposits formed by mechanical processes of transportation and concentration (detrital deposits). Deposits produced by chemical processes of concentration in bodies of surface water by reactions between solutions. Deposits formed by evaporation of bodies of surface water. Mineral deposits resulting from processes of rock decay and weathering. Deposits formed by concentration of substances contained in the surrounding rocks by means of circulating waters.

General.—The form, structure and texture of mineral deposits—ore shoots. Classification of mineral deposits—Structural control of mineral deposits—Geological thermometers—Metallogenic epochs and provinces.

Metallic Minerals.—The study of the following with reference to origin, mode of occurrence, distribution in India and uses:

Gold-Copper-Lead-Zinc-Aluminium-Magnesium Iron Manganese-Chromium-Strategic Minerals of India.

Non-Metallic Minerals.—Industrial geology; Refractories—Abrasives—Ceramics and glass making materials—Fertilizers—Natural paints and Pigments—Cements—Gem minerals.

The study of the following with reference to origin, mode of occurrence distribution in India and uses:—

Mica.—Vermiculite - Asbestos - Barytes - Gypsum - Garnet-Corundum - Kyanite - Sillimanite - Ochre - Graphite Talc-Fluorspar-Beryl-Zircon.

**Fuels**

Coal.—Origin and classification of coal—Occurrence and distribution of coal in India—Indian reserves of coal—Conservation of coal in India.

Petroleum, Natural gas and Oil shale.—Its origin and accumulation—Gas and oil Traps—Classification of oil and gas reservoirs. Petroleum bearing regions of India—Searching for new gas and oil fields. Atomic energy minerals—Uranium and Thorium minerals.

**(8) Engineering Geology and Groundwater Geology**

Engineering Geology.—The role of a geologist in engineering works. Engineering properties of rock—Specific gravity, porosity, sorption, compressive strength, tensile strength modulus of elasticity for rocks, modulus of compression. Poisson's ratio, residual stresses, etc.

Rock deformation in nature, studies of the igneous, sedimentary and metamorphic rocks in relation to bearing strength of the foundation, resistance to sliding, watertightness, grouting requirements and weathering.

Engineering properties of soils and elements of soil mechanics. Soil profile, soil moisture, size, shape and gradation of soil particles, soil classifications—porosity, void ratio, degree of saturation, permeability, density and unit weight of soil; liquid, plastic, shrinkage and consistency limits, swelling and expansion pressures and shearing strength.

Dams.—and their classification, types of spillways with their parts; forces acting on the dams and their appurtenances. Foundation and abutment problems and reservoir areas problems; construction materials for dams. Methods of exploration for dam sites.

Canal.—Investigations for canals, canal drains, and canal linings; sedimentation in canals and its control.

Tunnels.—Classification and nomenclature. Geological considerations affecting choice and constructions of tunnels.

Highways.—Location and exploration for highways; materials of construction.

Bridges.—Classification, abutments and piers of bridges, bridge foundations and geological considerations thereof.

Buildings.—General considerations and types of building foundations and their geological aspects. Earthquakes and aseismic design. Landslides and other crustal displacements and possibility of their prevention.

Groundwater Geology.—Sources of ground water, its occurrence, and origin. Importance of meteorology in hydrologic

investigations. Hydrological properties of water-bearing materials. The water-table and its fluctuations, Free and confined water.

Pressure surface, lowering of water-table by pumping; different methods of prospecting for ground water. Drilling water-wells, their classification and construction, well records. Hydraulics of wells.

Testing wells for yields methods and equipment used. Impurities and treatment of natural waters. Use and conservation of ground water.

(9) *Elementary Mining Methods and Recovery of Metals and Minerals*

*Introduction.*—Economic minerals, their distribution, sufficiency and production. A short history of mining.

*Prospecting.*—Surface and underground indications—geological and geophysical methods. Prospecting by trenches, test pits and boreholes. Purpose of boreholes. Simple methods of percussive and rotary boring. Computation of borehole records.

*Development of deposits.*—Position, shape and size of openings, methods of driving or sinking of adits, inclines and shafts, their temporary and permanent support. Ventilation illumination, pumping and safety measures during shaft sinking. Sinking tools and equipment. Driving of main-haulage roads and development heading, their position, shape and size. Driving of levels, cross cuts, winzes and raises.

Methods of breaking rocks, use of explosives. Different types of explosives, their composition and uses. Gunpowder, dynamite, gelignite, fuses, detonators and exploders. Methods of examination of blasting holes, charging them, preparing the charge. Blasting practices, precautions and difficulties.

Methods of working; open cast mining; development, establishment of faces, production, transportation, safety precautions and protection against rain and ground water.

*Coal mining methods.*—Elementary study of bord and pillar system, panel system and longwall system of working.

*Metal mining methods.*—Elementary study of development of ore deposits, simple methods of stoping and ore handling in stopes. Support of excavation, Timber and steel supports. Their application for supporting shaft bottom haulage landings, main roadways, the development of galleries and production faces.

*Methods of handling materials.*—Haulage—Rope haulages. Haulage engines. Application of haulages on the surface and under ground. Winding—Elementary study of winding engines, winding equipment and shaft fittings.

(10) *Mining Geology, Ore Beneficiation and Mineral Economics*

*Mining Geology.*—Relation of Geology to mining industry. Field techniques of mining geology—Drilling. Examination and developing prospects, geological work at an operating mine. Laboratory methods employed in mining geology. Interpretation, correlation and use of field data. Preparation of maps, models, illustrations and their uses. Writing of reports.

*Prospecting:* Regulations, field-equipment method of transportation, field tests and measurements; Guides—physiographic, mineralogical, stratigraphic, lithologic and structural—for location of ore deposits. Targets and loci. Methods of surface and underground prospecting, including pit, shaft, trench sinking, bulldozing, borehole drilling, sampling and assaying methods. Fundamentals of geophysical, geochemical and geobotanical prospecting.

Methods of mining, including openpit, alluvial and underground methods. Support of excavations. Elementary ideas about explosives used for rock-breaking and blasting. Transportation and hoisting. Mine drainage and pumping. Ventilation and illumination. Mine organisation. Management. Safety works, Mine laws.

Mine examination, theory and methods of sampling. Salting and its safeguards. Treatment of samples, sampling calculations. Calculation of ore reserves. Determination of cost of mining, capital expenditure and amortization. Determination of present value. Estimation of the future costs and profits and the life of a mine. Valuation of a prospect. Preparation of a valuation report.

*Ore beneficiation.*—Nature and scope, Relation to smelting; utility. Properties of minerals in relation to their dressing. Preliminary processes of concentration, such as crushing, grinding and sizing. Preliminary washing and sorting, heavy fluid separation, jigging, tabling, flocculation and dispersion, flotation and agglomeration, electrostatic and centrifugal separation amalgamation and heat treatment methods; treatment of concentrates by dewatering, filtration, drying and thickening methods; dressing systems and plans; flow sheets of common types. Application of ore microscopy to ore beneficiation techniques.

Dressing of metallic ores. Sulphide ores, non-sulphide ores and native metals—Gold, Silver, Copper, Lead, Zinc Manganese, Tin, Titanium and Chromium.

*Dressing of non-metallic ores.*—Graphite barites, gypsum, steatite, clays and coal. Coal washing with special emphasis on Indian conditions.

*Mineral Economics.*—Definition; importance of minerals in national economy, pattern of mineral relationships, geographic and political factors in mineral use, features peculiar to mineral industries, economic factors common to mineral and manufacturing industries. Demand, supply, cartels, substitutes, market speculation and production costs, changing mineral requirements; international nature and movement of minerals, trade restrictions, tariffs, quotas and embargoes, production incentives, foreign development and exploitation of mineral raw materials, strategic, critical and essential minerals. National mineral policy. Mineral concession rules in India. Mineral production of important minerals in India.

Total world resources, reserves and production of important minerals, importance of steel and fuels in modern economy, impact of atomic energy on conventional fuels.

(11) *Geology of Coal and Oil*

*Coal.*—Varieties of coal. Origin and mode of occurrence of coal. Physical characters and chemical constituents of coal. Banded constituents of coal, their characters and identification, classification and rank and grade of coal. Washing of coal and briquetting, Carbonisation. Coal petrography.

*Mining of Coal.*—Elementary study of coal mining methods. Structural features of coal seams. Conservation of coal. Utilization of coal.

Methods of sampling of coal in mines and in laboratory. Ultimate and proximate analysis of coal. Determination of caking index and calculation of calorific value. Prospecting of coal and valuation of coal-bearing lands.

A detailed study of the coal fields of India with particular reference to their distribution, grades, exports and imports, reserves and future prospects. Coal-bearing formations and regions of the world.

*Petroleum.*—Occurrence of oil and natural gas—surface and subsurface; reservoirs and petroleum pools. Geologic history, origin, migration and accumulation. Petroleum provinces. Petroleum prospecting—geological and different geophysical methods. Features of oil drilling. Methods of estimating oil recoveries as also of reserves, uses of associated product.

A detailed study of the oil-bearing regions of the Indian sub-continent with particular reference to Assam. Prospects of oil-finding in other parts of India. Distribution of oil and gas fields in the world and known oil and gas reserves.

*NOTE.*—Candidates may be required to answer two-thirds of the required number of questions from Oil Geology part and one-third from the Coal Geology part.

(12) *Exploration Geophysics*

Fundamental principles of exploration geophysics.

*Gravity Prospecting.*—Factors causing variations in gravity; latitude effects. Absolute gravity measurements—the pendulum-theory and recording methods. Gravimeters—design and operating principles; types of gravimeters, calibration, levelling and photo-grammetric mapping, field operations—drift curve and closure, corrections and field calculations. Eotvos torsion balance—theory of torsion balance. The gradients of gravity and the curvature conditions of equipotential surfaces. Gravity calculations and interpretation. The source of gravity variations; gravity effects of geometrical forms; graphical and

numerical computation methods; Depth estimation; Relation of gravity anomalies to geologic structure.

**Magnetic Prospecting.**—History of magnetic prospecting; theory of earth inductor, dipneedle and Hotchkiss superdip; Field variometers—their description, theory, calibration. Field operation, correction; and reduction of field data. Magnetic surveys, quantities measured by vertical and horizontal magnetometers.

**Magnetic anomalies and interpretation.**—source of magnetic variations; magnetic interpretation; the relation between magnetic and gravitational effects. Relation between vertical magnetic and curvature effects for irregular forms; magnetic effects of buried well-casing; applications of magnetic prospecting; depth estimation. Illustration of magnetic surveys.

**Airborne magnetometer.**—Instrumentation, operating procedures; interpretation of aeromagnetic data; advantages and limitations of aeromagnetic surveying; results of some typical aeromagnetic surveys.

**Electrical Prospecting.**—Classification of methods. Spontaneous polarisation method, operational principle, field equipment, measurement and interpretation; results of field work.

**Equipotential line methods.**—Introduction; layout of Survey, relative merits of A.G. & D.C., point and linear electrode system; interpretation of results.

**A.C. potential ratio method.**—Field operations, plotting and interpretation of results; application of ratiometer to comparison of magnetic fields; the two coil system of balancing; theoretical considerations.

**Resistivity methods.**—Operating principles; fundamental derivations of current flow; larger problems; electrode configurations; depth estimation, near surface inhomogeneities, Analysis of resistivity data; Field procedure and equipment; examples of field work.

**Electromagnetic methods.**—Physical principles; measurement of magnetic fields; conductive equipment for energising the ground; magnetic measuring equipment. Inductive measurements; search coils; directional properties; inductive equipment; horizontal and vertical loop methods-apparatus, operation, field procedure and plotting and interpretation of results.

**Absorption of electromagnetic waves.**—Phase of secondary field; elliptical polarisation. Compounding of elliptical fields; field of horizontal loop; use of double coils when secondary fields of great magnitude are obtained.

**Seismic Prospecting.**—Methods of seismic prospecting—(a) General considerations (source of energy, energy transmission, periods, transmission of short instant); (b) Fan shooting method; (c) Refraction method, travel times on single and multiple horizontal and inclined contacts; (d) Reflection method, Instruments, travel times, average velocity, calculation and interpretation. Reduction of seismic observations; weathering corrections.

**Elementary theory, description and calibration of seismographs; time marking; recording equipment, magnetic tape. Recording equipment for seismic prospecting. Seismic field operations; the detector spread; multiple and pattern shooting. Shot hole drilling; explosives-various types used, electrical firing circuits, care in handling explosives, safety regulations. Surface velocities; marking seismograph records, mapping the results; interpretation of results; limitations of seismograph mapping.**

**Radioactive Prospecting and Well-Logging Methods.**—Radioactive methods; Methods of radioactive prospecting; portable radiation meters and scintillometers, Radiometric surveys, Airborne surveys. Applications of radioactive methods.

**Electrical logging; Resistivity and self potential measurements, electrode configurations; electrofiltration; electrochemical interpretation. Instrumentation.**

**Temperature measurement in bore-holes, gradients; water and cement logging.**

**Radioactivity well logging; theory, instrumentation; interpretation; typical response curves; effect of casing. Neutron logging. Comparison of radioactivity and electrical logs. Applications and field examples.**

### (13) Geochemistry, Photogeology and Nuclear Geology.

**Geochemistry.**—Scope of Geochemistry; age, origin and composition of the universe; composition of meteorites, cosmic abundance of elements, origin of elements; structure and

composition of the earth, primary geochemical differentiation of the earth, geochemical classification of the elements.

**Principles of crystal structure, different classes of bonds, ionic radius, coordination number, structure of silicates, isomorphism, atomic substitution and polymorphism.**

**Magmatism and igneous rocks, crystallisation of a magma, Goldschmidt's rules of camouflage, capture and admittance, minor elements in magmatic crystallisation, residual solutions and pegmatites, volatile components of a magma, magmatism and ore deposition.**

**Geochemistry of sedimentation, Goldich's stability series, physico-chemical factors in sedimentation, ionic potential, hydrogenion concentration, oxidation-reduction potential, colloidal processes, products of sedimentation.**

**Metamorphism as a geochemical process, mineral transformations and the facies principles, ultrametamorphism.**

**The geochemical cycle.**

**Geochemistry of Li, Na, K, Rb, Cu, Ag, Au, Be, Mg, Ca, Sr, Ba, Zn, Cd, Hg, Al, Sc, rare earths, Ga, In, C, Si, Ge, Sn, Pb, Ti, Zr, Hf, Th, N, P, As, Sb, Bi, V, S, Cr, Mo, W, U, F, Mn, Fe, Co and Ni.**

**Elementary principles of geochemical prospecting.**

**Photogeology.**—Photo reading and interpretation; instrumentation and measurements study of mosaics, interpretation of physiography, stratigraphy and structure; use of aerial photographs in geological mapping; interpretation of aerial photographs in petroleum geology, mining geology, engineering geology and hydrological studies.

**Nuclear Geology.**—Radio Activity:  $\alpha$ ,  $\beta$  and  $\gamma$  rays their properties; qualitative discussion on the decay theories, Artificial radioactivity, nuclear accelerators, nuclear reactions, nuclear energy and its peaceful uses.

**Detailed study of the minerals of Uranium, Thorium, Beryllium and the rare earths with reference to their composition, properties, origin, mode of occurrence, distribution, political control, prospecting (the Geiger Counter and its applications), uses, tests, prices and market.**

**Portable radiation meters and scintillometers. Radiometric surveys. Applications of radioactive methods.**

### (14) Tectonics

**The origin of continents and oceans. Palaeogeographic conditions during each of the chief epochs of the earth's history. Earth movements, epeirogeny and mountainbuilding and their influence on sedimentation; Alpine and Himalayan Orogenies and latest developments on tectonic approach to continental drift Geological Cycles, Structural units of the earth's crust. A detailed study of the structural and tectonic history of India.**

### (15) Advanced Stratigraphy

**The principles of stratigraphy, Geological record and its imperfections. Sea-level and eustatic movements. The classification of rocks by age. Lithology. The use of fossils in correlation. Homotaxis and contemporaneity. Climatic variations. The distribution of animals and plants. The permanence of oceans and continents. The stratigraphical units. The orogenetic succession.**

**The primeval era.**—Indian Pre-paleozoic—the Dharwar system, Purana group. Lewisians. Moinians, Dalradians of British Isles, Laurentian, Huronian and Keweenawan systems of Canada. Equivalents in Africa, Australia and the United States.

**The Palaeozoic era—general succession and fauna in each of the systems of the era, namely Cambrian, Ordovician, Silurian, Devonian. Carboniferous and Permian, along with the distribution of rocks of each of these systems in the world. Flora of the Devonian. The Old Red Sandstone—the terrestrial representative of this period. The Devonian Tectonic. The flora of the Carboniferous. The Gondwana land comprising India, Australia, Africa, and Eastern South America and its rock formations for Carboniferous and later periods with their flora.**

**The Mesozoic era.**—The distribution of the Triassic, Jurassic and Cretaceous systems in the world and the 'life' in each.

**The Kainozoic group—General features. Succession, and fauna and flora in each of its systems—Eocene, Oligocene, Miocene. Pliocene and Pleistocene, Pleistocene glaciations, and their correlation.**

**Interglacial deposits.**—A study of the distribution of land and sea in each of the different geological periods of the earth's history.

**Orogeny.**—Main European orogenic systems—Caledonian, Hercynian (or Variscan), and Alpine, and their divisions into epochs—Their American and other equivalents.

#### (16) Advanced Palaeontology

**Palaeontology.**—Definition, the organic world, the animal kingdom, classification of animals, their habitats and habits. Definition of fossil. Nature of fossil record—uses of fossils.

#### Invertebrate Palaeontology

**Protazoa.**—Introduction, classes and orders. Foraminifera and Radiolaria—nature of the organism growth and reproduction and types of tests and their formation; classification and geological history.

**Porifera.**—Introduction nature of the animal—Fossilization, classification and geological history and distribution.

**Coelenterata.**—Introduction, classification—Hydrozoa, Stomatoporoidea, Scyphozoa and Anthozoa and its sub classes; Coelenterata as rock builders and their geologic history and evolution.

**Bryozoa.**—General characteristics and morphology. Geologic history and evolution.

**Brachiopoda.**—Introduction—the animal, Ontogeny, the Shell—its general morphology, external and internal morphology of the valves, composition and structures of the shell, classification, geologic history. Nature and stratigraphic use of fossil brachiopoda.

**Mollusca.**—The animal, the shell, its development, modification in its shape, structure and compositions; Hingeline structures, dentition, classification. Lamellibranchia—animal, shell, classification evolution and geologic history. Gastropoda—General considerations, morphology of soft parts, the shell and classification. Nature of fossil gastropoda. Cephalopoda—Nautilus, Architecture and structure of cephalopod shells; classifications—Nautiloidea, Ammonoidea; geologic history of cephalopoda. Ontogeny, stratigraphic range, nature of fossil record of the cephalopoda. Geologic history of the Mollusca.

**Arthropoda.**—Classes, Crustacea and Arachnoidea. Trilobita; morphology and exoskeleton, classification, ontogeny and phylogeny, fossil record and stratigraphic range. Insecta; geologic history, evolution and origin of the Arthropoda.

**Echinoderma; Morphology, the skeleton and classification. Cystoidea. Crinoidea—Morphology and skeleton. Echinoidea; Soft parts, the test, ecology, stratigraphic range and geologic history. Holothuroidea, phylogeny of the echinoderma.**

#### Hemichordata :

**Graptolithina.**—Nature of the skeleton, classification, colonial development, geologic history and biologic affinities, **Vertebrate Palaeontology**

**Animals with backbones.**—The sequence of vertebrates through geologic time; classification.

**Jawless vertebrates.**—The ostracoderms, and their evolutionary position. Placoderms.

**Fishes.**—Bony fishes, air breathing fishes, lung fishes, Appearance of the amphibians—labyrinthodonts.

**Distribution of the early vertebrate-bearing sediments. Reptiles, their classification. Dinosaurs. Flying reptiles and Birds. Mesozoic era and its varied faunas.**

**Mammals.**—Marsupials, Placentals, Evolution of the Primates, Carnivores, Ungulates, Perissodactyls, Artiodactyls, elephants and their kin. Evolution of Horse; mankind.

**Palaeobotany.**—Elementary principles. A study of the flora of the past geological periods with particular reference to the Gondwanas of India.

#### APPENDIX II

##### Regulations Relating to the Physical Examination of Candidates

(These regulations are published for the convenience of candidates and in order to enable them to ascertain the probability of their coming up to the required physical standard. But it must be clearly understood that the Government of India reserve to themselves in absolute discretion to reject as unfit any candidate whom they may consider, on the report of the Medical Board, to be physically disqualified and that

their discretion is in no respect limited by these regulations. These regulations are intended merely for the guidance of Medical Examiners and are not meant to restrict their discretion in any way. For the disabled ex-Defence Services personnel, the standards will be relaxed consistent with the requirements of the posts.)

1. To be passed as fit for appointment a candidate must be in good mental and bodily health and free from any physical defect likely to interfere with the efficient performance of the duties of his appointment.

2. In the matter of the correlation of age, height and chest girth of candidates of Indian (including Anglo-Indian) race, it is left to the Medical Board to use whatever correlation figures are considered most suitable as a guide in the examination of the candidates. If there be any disproportion with regard to height, weight, and chest girth, the candidate should be hospitalised for investigation and X-Ray of the chest taken before the candidate is declared fit or not fit by the Board.

3. The candidate's height will be measured as follows :

He will remove his shoes and be placed against the standard with his feet together and the weight thrown on the heels and not on the toes or other sides of the feet. He will stand erect without rigidity and with the heels, calves, buttocks and shoulders touching the standards; the chin will be depressed to bring the vertex of the head level under the horizontal bar, and the height will be recorded in centimetres and parts of a centimetre to halves.

4. The candidate's chest will be measured as follows :—

He will be made to stand erect with his feet together, and to raise his arms over his head. The tape will be so adjusted round the chest that its upper edge touches the inferior angles of the shoulders blades behind and lies in the same horizontal place when the tape is taken round the chest. The arms will then be lowered to hang loosely by the side and care will be taken that the shoulders are not thrown upwards or backwards so as to displace the tape. The candidate will then be directed to take a deep inspiration several times and the maximum expansion of the chest will be carefully noted, and the minimum and maximum will then be recorded in centimetres thus 84-89, 86-93.5 etc. In recording the measurements fractions of less than half a centimetre should not be noted.

5. The candidate will also be weighed and his weight recorded in Kilograms, fraction of half a Kilogram should not be noted.

6. The candidate's eye-sight will be tested in accordance with following rules. The result of each test will be recorded.

(i) **General.**—The candidate's eyes will be submitted to a general examination directed to the detection of any disease or abnormality. The candidate will be rejected if he suffers from any squint or morbid conditions of eyes, eyelids or contiguous structures of such a sort as to render or are likely at a future date to render him unfit for service.

(ii) **Visual Acuity.**—The examination for determining the acuteness of vision includes two tests, one for the distant, the other for near vision. Each eye will be examined separately.

There shall be no limit for minimum naked eye vision but the naked eye vision of the candidates shall, however, be recorded by the Medical Board or other medical authority in every case as it will furnish the basic information in regard to the condition of the eye.

The standards for distant and near vision with or without glasses shall be as follows :—

Distant Vision		Near Vision	
Better eye	Worse eye	Better eye	Worse eye
6/9 or 6/6	6/9 6/12	0.6	0.8



NOTE (1).—Total amount of Myopia (including the cylinder) shall not exceed  $-4.00D$ . Total amount of Hypermetropia (including the cylinder) shall not exceed  $+4.00D$ .

NOTE (2).—*Fundus Examination*: Wherever possible fundus examination will be carried out at the discretion of the Medical Board and results recorded.

NOTE (3).—*Colour vision*: (i) The testing of colour vision shall be essential

(ii) Colour perception should be graded into a higher and a lower grade depending upon the size of the aperture in the lantern as described in the table below:—

Grade	Higher Grade of colour perception	Lower Grade of colour perception
1. Distance between the lamp and candidates . . .	4.9 metres	4.9 metres
2. Size of aperture . . .	1.3 mm.	13mm.
3. Time of Exposure . . .	5 sec.	5 sec.

For the services concerned with safety of the Public, e.g. pilots, drivers, guards, etc., the higher grade of colour vision is essential but for others the lower grade of colour vision should be considered sufficient. The same standards of colour vision should be applicable in respect of all engineering personnel in whose case colour perception is considered essential irrespective of the fact whether their duties involve field work or not.

(iii) Satisfactory colour vision constitutes recognition with ease and without hesitation of signal red, signal green and white colours. The use of Ishihara's plates, shown in good light and a suitable lantern like Edrige Green's shall be considered quite dependable for testing colour vision. While either of the two tests may ordinarily be considered sufficient, in respect of the services concerned with road, rail and air traffic, it is essential to carry out the lantern test. In doubtful cases where a candidate fails to qualify when tested by only one of the two tests, both the tests should be employed.

NOTE (4).—*Field of vision*.—The field of vision shall be tested by the confrontation method. Where such test gives unsatisfactory or doubtful results the field of vision should be determined on the perimeter.

NOTE (5).—*Night Blindness*.—Night Blindness need not be tested as a routine, but only in special cases. No standard test for the testing of night blindness or dark adaptation is prescribed. The Medical Board should be given the discretion to improvise such rough tests, e.g., recording of visual acuity with reduced illumination or by making the candidate recognise various objects in a darkened room after he/she has been there for 20 to 30 minutes. Candidates' own statements should not always be relied upon, but they should be given due consideration.

NOTE (6).—(a) *Ocular conditions other than visual acuity*.—Any organic disease or a progressive refractive error which is likely to result in lowering the visual acuity should be considered as a disqualification.

(b) *Trachoma*.—Trachoma, unless complicated shall not ordinarily be a cause for disqualification.

(c) *Squint*.—Where the presence of binocular vision is essential squint, even if the visual acuity is of the prescribed standard, should be considered as a disqualification.

(d) *One-eyed persons*.—The employment of one-eyed individuals is not recommended.

#### 7. Blood Pressure

The Board will use its discretion regarding Blood Pressure. A rough method of calculating normal maximum systolic pressure is as follows:—

- (i) With young subjects 15-25 years of age the average is about 100 plus the age.
- (ii) With subjects over 25 years of age the general rule of 110 plus half the age seems quite satisfactory.

N.B.—As a general rule any systolic pressure over 140 mm and diastolic over 90 mm should be regarded as suspicious and the candidate should be hospitalised by the Board before giving their final opinion regarding the candidate's fitness or otherwise. The hospitalisation report should indicate whether the rise in blood pressure is of a transient nature due to excitement, etc., or whether it is due to any organic disease. In all such cases X-Ray and electro-cardiographic examinations of heart and blood urea clearance test should also be done as a routine. The final decision as to the fitness or otherwise of a candidate will, however, rest with the Medical Board only.

#### Method of taking Blood Pressure

The mercury manometer type of instrument should be used as a rule. The measurement should not be taken within fifteen minutes of any exercise or excitement. Provided the patient, and particularly his arms is relaxed, he may be either lying or sitting. The arm is supported comfortably at the patient's side in a more or less horizontal position. The arm should be freed from clothes to the shoulder. The cuff, completely deflated, should be applied with the middle of the rubber over the inner side of the arm, and its lower edge an inch or two above the bent of the elbow. The following turns of cloth bandage should spread evenly over the bag to avoid bulging during inflation.

The brachial artery is located by palpitation at the bend of the elbow and the stethoscope is then applied lightly and centrally over it below, but not in contact with the cuff. The cuff is inflated to about 200 mm. Hg. and then slowly deflated. The level at which the column stands when soft successive sounds are heard represents the systolic Pressure. When more air is allowed to escape the sounds will be heard to increase in intensity. The level at which the well-heard clear sounds change to soft muffled fading sounds represents the diastolic pressure. The measurements should be taken in a fairly brief period of time as prolonged pressure of the cuff is irritating to the patient and will vitiate the readings. Rechecking, if necessary, should be done only a few minutes after complete deflation of the cuff. (Sometimes, as the cuff is deflated sounds are heard at a certain level; they may disappear as pressure falls and reappear at still lower level. This silent Gap may cause error in reading).

8. The urine (passed in the presence of the examiner) should be examined and the result recorded. Where a Medical Board finds sugar present in a candidate's urine by the usual chemical tests, the Board will proceed with the examination with all its other aspects and will also specially note any signs or symptom suggestive of diabetes. If, except for the glycosuria, the Board finds the candidate conforms to the standard of medical fitness required, they may pass the candidate "fit subject to the glycosuria being non-diabetic" and the Board will refer the case to a specified specialist in Medicine who has hospital and laboratory facilities at his disposal. The Medical specialist will carry out whatever examination, clinical and laboratory, he considers necessary including a standard blood sugar tolerance test, and will submit his opinion to the Medical Board, upon which the Medical Board will base its final opinion "fit" or "unfit". The candidate will not be required to appear in person before the Board on the second occasion. To exclude the effects of medication it may be necessary to retain a candidate for several days in hospital, under strict supervision.

9. The following additional points should be observed:—

- (a) that the candidates hearing in each ear is good and that there is no sign of disease of the ear. In case it is defective the candidate should be examined by the ear specialist. Provided that if the defect in hearing is remediable by operation or by use of a hearing aid, a candidate cannot be declared unfit on that account provided he/she has no progressive disease in the ear;
- (b) that his/her speech is without impediment;
- (c) that his/her teeth are in good order and that he/she is provided with dentures where necessary for effective mastication (well filled teeth will be considered as sound);
- (d) that the chest is well formed and his chest expansion sufficient; and that his heart and lungs are sound;
- (e) that there is no evidence of any abdominal disease;

- (f) that he is not ruptured;
- (g) that he does not suffer from hydrocele, severe degree of varicocele, varicose veins or piles;
- (h) that his limbs, hands, and feet are well formed and developed and that there is free and perfect motion of all his joints;
- (i) that he does not suffer from any inveterate skin disease;
- (j) that there is no congenital malformation or defect;
- (k) that he does not bear traces of acute or chronic disease pointing to an impaired constitution;
- (l) that he bears marks efficient vaccination; and
- (m) that he is free from communicable disease.

10. Radiographic examination of the chest should be done as a routine in all cases for detecting any abnormality of the heart and lungs, which may not be apparent by ordinary physical examination.

When any defect is found it must be noted in the Certificate and the medical examiner should state his opinion whether or not it is likely to interfere with the efficient performance of the duties which will be required of the candidate.

NOTE.—Candidates are warned that there is no right of appeal from a Medical Board, special or standing appointed to determine their fitness for the above posts. If, however, Government are satisfied on the evidence produced before them of the possibility of an error of judgement in the decision of the first Board, it is open to Government to allow an appeal to a second Board. Such evidence should be submitted within one month of the date of the communication in which the decision of the first Medical Board is communicated to the candidate otherwise no request for an appeal to a second Medical Board will be considered.

If any medical certificate is produced by a candidate as a piece of evidence about the possibility of an error of judgement in the decision of the first Board, the certificate will not be taken into consideration unless it contains a note by the medical practitioner concerned to the effect that it has been given in full knowledge of the fact that the candidate has already been rejected as unfit for service by the Medical Board.

#### Medical Board's Report

The following intimation is made for the guidance of the Medical Examiner.

The standard of physical fitness to be adopted should make due allowance for the age and length of service, if any, of the candidate concerned.

No person will be deemed qualified for admission to the public service who shall not satisfy Government, or the appointing authority, as the case may be, that he has no disease, constitutional affection, or bodily infirmity unfitting him, or likely to unfit him for that service.

It should be understood that the question of fitness involves future as well as the present and that one of the main objects of medical examination is to secure continuous effective service, and in the case of candidates for permanent appointment to prevent early pension or payments in case of premature death. It is at the same time to be noted that the question is one of the likelihood of continuous effective service, and that rejection of a candidate need not be advised on account of the presence of a defect which is only a small proportion of cases is found to interfere with continuous effective service.

A lady doctor will be coopted as a member of the Medical Board whenever a woman candidate is to be examined.

Candidates appointed to the posts of Geologist (Jr.) and Assistant Geologists are liable for field service in or out of India. In the case of such a candidate, the Medical Board should specifically record their opinion as to his fitness or otherwise for field service.

The report of the Medical Board should be treated as confidential.

In case where a candidate is declared unfit for appointment in the Government Service, the grounds for

rejection may be communicated to the candidate in board terms without giving minute details regarding the defects pointed out by the Medical Board.

In cases where a Medical Board considers that a minor disability disqualifying a candidate for Government service can be cured by treatment (medical or surgical) a statement to that effect should be recorded by the Medical Board. There is no objection to a candidate being informed of the Board's opinion to this effect by the appointing authority and when a cure has been effected it will be open to the authority concerned to ask for another Medical Board.

In the case of candidates who are to be declared "Temporarily Unfit" the period specified for re-examination should not ordinarily exceed six months at the maximum. On re-examination after the specified period these candidates should not be declared temporarily unfit for a further period but a final decision in regard to their fitness for appointment or otherwise should be given.

#### (a) Candidate's statement and declaration

The candidate must make the Statement required below prior to his Medical Examination and must sign the Declaration appended thereto. His attention is specially directed to the warning contained in the Note below:—

1. State your name in full (in block letters).....
2. State your age and birth place.....
3. (a) Have you ever had small-pox, intermittent or any other fever, enlargement or suppuration of glands, spitting of blood, asthma, heart disease, lung disease, fainting attacks, rheumatism, appendicitis?

OR

- (b) any other disease or accident requiring confinement to bed and medical or surgical treatment?
4. When were you last vaccinated?
5. Have you or any of your near relation been afflicted with consumption, scrofula, gout, asthma, fits, epilepsy, or insanity?
6. Have you suffered from any form of nervousness due to over work or any other cause?
7. Furnish the following particulars concerning your family?

Fathers' age if living, and state of health	Father's age at death and cause of death	No. of brothers living, and their ages and state of health	No. of brothers dead, and ages and cause of death
---	--	--	---



Mother's age if living and state of health	Mother's age at death and cause of death	No. of sisters living, their ages and state of health	No. of sisters dead their ages at and cause of death

Acuity of vision	Naked eye	With glasses	Strength of glasses		
			S.	Cyl.	Axis
Distant Vision RE LE					
Near Vision RE LE					
Hypermetropia (Manifest) RE LE					

4. Ears : Inspection ..... Hearing : Right Ear.....  
Left Ear.....

5. Glands ..... Thyroid

6. Condition of teeth .....

7. Respiratory system : Does physical examination reveal anything abnormal in the respiratory organs?

If yes, explain fully .....

8. Circulatory System :

(a) Heart, Any organic lesions ? ..... Rate :  
Standing ..... After hopping 25 times.....  
2 minutes after hopping .....

(b) Blood Pressure; Systolic.....Diastolic.....

9. Abdomen; Girth ..... Tenderness .....

Hernia .....

(a) Palpably Liver ..... Spleen .....  
Kidneys ..... Tumour .....

(b) Hemorrhoids ..... Fistula.....

10. Nervous System : Indications of nervous or mental disabilities .....

11. Loco-Motor System : Any abnormality .....

12. Genito Urinary System : Any evidence of Hydrocele varicocele, etc.

Urine Analysis :

(a) Physical appearance .....  
(b) Sp. Gr .....  
(c) Albumen .....  
(d) Sugar .....  
(e) Casts .....  
(f) Cells .....

13. Report of X-Ray Examination of Chest.....

14. Is there anything in the health of the candidate likely to render him unfit for the efficient discharge of his duties in the service for which he is a candidate ? .....

15. (a) For which services has the candidate been examined and found in all respects qualified for the efficient and continuous discharge of his duties and for which of them is he considered unfit ? .....

(b) Is the candidate fit for FIELD SERVICE.....

NOTE.—The Board should record their findings under one of the following three categories :

(i) Fit  
(ii) Unfit on account of .....  
(iii) Temporary unfit on account of .....

President .....  
Member .....

Place .....  
Date .....

8. Have you been examined by a Medical Board before?

9. If answer to the above is, Yes, please state what Services posts you were examined for?

10. Who was the examining authority?

11. When and where was the Medical Board held ?  
.....

12. Result of the Medical Board's examination, if communicated to you or if known.....

I declare all the above answers to be, to the best of my belief, true and correct.

Candidate's signature.....

Signed in my presence.

Signature of Chairman of the Board.

NOTE.—The candidate will be held responsible for the accuracy of the above statement. By wilfully suppressing any information he will incur the risk of losing the appointment and, if appointed, of forfeiting all claims to superannuation Allowance or Gratuity.

(b) Report of the Medical Board on (Name of candidate) physical examination.

1. General development : Good.... Fair.... Poor....

Nutrition : Thin ..... Average ..... Obese.....

Height (without shoes) ..... Weight .....

Best weight.....When ?

Any recent change in weight ? .....

Temperature .....

Girth of chest :

(1) After full inspiration.....

(2) After full expiration .....

2. Skin : any obvious disease .....

3. Eyes .....

(1) Any disease .....

(2) Night blindness .....

(3) Defect in colour vision.....

(4) Field of Vision.....

(5) Visual Acuity .....

(6) Ability for stereoscopic fusion .....

## APPENDIX III

Brief particulars relating to the posts for which recruitment is being made through this examination.

1. *Geologist (Junior), Class I—*

(a) Candidates selected for appointment will be appointed on probation for a period of two years, which may be extended, if necessary.

(b) Prescribed scales of pay in the Geological Survey of India :—

(i) Geologist (Jr. Scale)—Rs. 400—40—800—50—950.

(ii) Geologist (Sr. Scale)—Rs. 700—50—1,250.

(iii) Superintending Geologist/Director—Rs. 1,300—60—1,600.

(iv) Superintending Geologist/Director (Selection Grade)—Rs. 1,600—100—1,800.

(v) Dy. Director General—Rs. 1,800—100—2,000.

(vi) Director-General—Rs. 2,250—125—2,500.

(c) Promotions to the higher grades of posts in the Department will be made in accordance with the recruitment rules subject to such modifications as may be made by Government from time to time.

(d) Conditions of service and leave and pension are those described in the Fundamental Rules and Civil Service Regulations respectively, subject to such modifications as may be made by Government from time to time.

(e) Conditions of Provident Fund are those laid down in the General Provident Fund (Central Services) Rules, subject to such modifications as may be made by Government from time to time.

(f) All officers of Geological Survey of India are liable for service in any part of India or outside India.

2. *Assistant Geologist, Class II—*

(a) Candidates selected for appointment will be appointed on probation for a period of two years which may be extended, if necessary.

(b) Prescribed scale of pay : Rs. 350—25—500—30—590—EB—30—800—EB—30—830—35—900.

(c) Recruitment to the Cadre of Geologist (Class I—Junior Scale) will be made partly through the Union Public Service Commission competitive examination, and partly through Departmental Promotion Committee by promotion from the next lower grade of Assistant Geologist of the Geological Survey of India in accordance with the recruitment rules subject to such modifications as may be made by Government from time to time.

(d) Conditions of service and leave and pension are those described in the Fundamental Rules and Civil Service Regulations respectively, subject to such modifications as may be made by Government from time to time.

(e) Conditions of Provident Fund are those laid down in General Provident Fund (Central Services) Rules, subject to such modifications as may be made by Government from time to time.

(f) Assistant Geologists are liable for service anywhere in India or outside India.

### MINISTRY OF INDUSTRIAL DEVELOPMENT AND COMPANY AFFAIRS

(Department of Industrial Development)

New Delhi, the 16th February 1968

## RESOLUTION

No. LEI(A)16(1)/67.—In supersession of the late Ministry of Industry and Supply Resolution No. LEI(A) 16(5)/64 dated the 17th September, 1965, the Government of India have decided to reconstitute the Advisory Committee for the

Development of Medical Instruments, Equipment and Appliances.

2. The functions of the Advisory Committee are :—

(i) To keep abreast of developments in the manufacture of medical and surgical instruments equipment and appliances and allied items;

(ii) to suggest from time to time new items that should be taken up for manufacture; and

(iii) to advise Government on matters concerning the development of this industry in all its aspects.

3. The Advisory Committee will consist of :—

## Chairman

1. Dr. P. K. Duraiswami, Additional Director General of Health Services, Directorate General of Health Services, Nirman Bhavan, New Delhi-11.

## Member and Alternate Chairman

2. Shri V. P. S. Menon, Industrial Adviser (Engineering), Directorate General of Technical Development, Udyog Bhavan, New Delhi-11.

## Members

3. Shri V. V. S. Murty, Deputy Superintendent, Quality Control, Surgical Instruments Plant, Nandambakham, Madras-16.

4. Dr. J. B. Shrivastava, Deputy Director General of Health Services, Directorate General of Health Services, Nirman Bhavan, New Delhi-11.

5. Shri J. A. Meher-Homji, C/o M/s. Elpro International Limited, Chinchwad, Poona-19.

6. Colonel N. N. Bery, Honorary Dental Adviser Ministry of Health, Family Planning and Urban Development, 13, Curzon Road, New Delhi-1.

7. Dr. H. T. Vira Reddi, 25, New Avadi Road, (off Poonamallee High Road) Kilpauk, Madras-10.

8. Dr. P. A. Menon, Chief Medical Officer, South Central Railway, Headquarters Office, Medical Branch, Lallaguda, Secunderabad-17.

## Member-Secretary

9. Shri V. Krishnamoorthy, Development Officer (Instruments) Directorate General of Technical Development, New Delhi.

4. The term of the Advisory Committee will last for two years in the first instance.

## ORDER

ORDERED that a copy of the Resolution be communicated to all concerned and that it be published in the Gazette of India for general information.

D. R. SUNDARAM, Jt. Secy.

## MINISTRY OF EDUCATION

New Delhi, the 19th February 1968

No. F.12-3/65-CAI(3).—Under Clause (xiii) of para 3 of the Government of India, Ministry of Education Resolution No. F. 12-3/65-C. 3, dated the 28th March, 1966, Shri Bhagwan Deva, Adhyax, Haryana Prantiya-Puratatva Sangrahalaya, P.O. Gurukul Jhajjar, Distt. Rohtak (Haryana) has been appointed as a member of the Central Advisory Board of Museums to represent the Government of Haryana on the Board for the period expiring on 27th March, 1969.

P. GANGULEE, Dy. Secy.